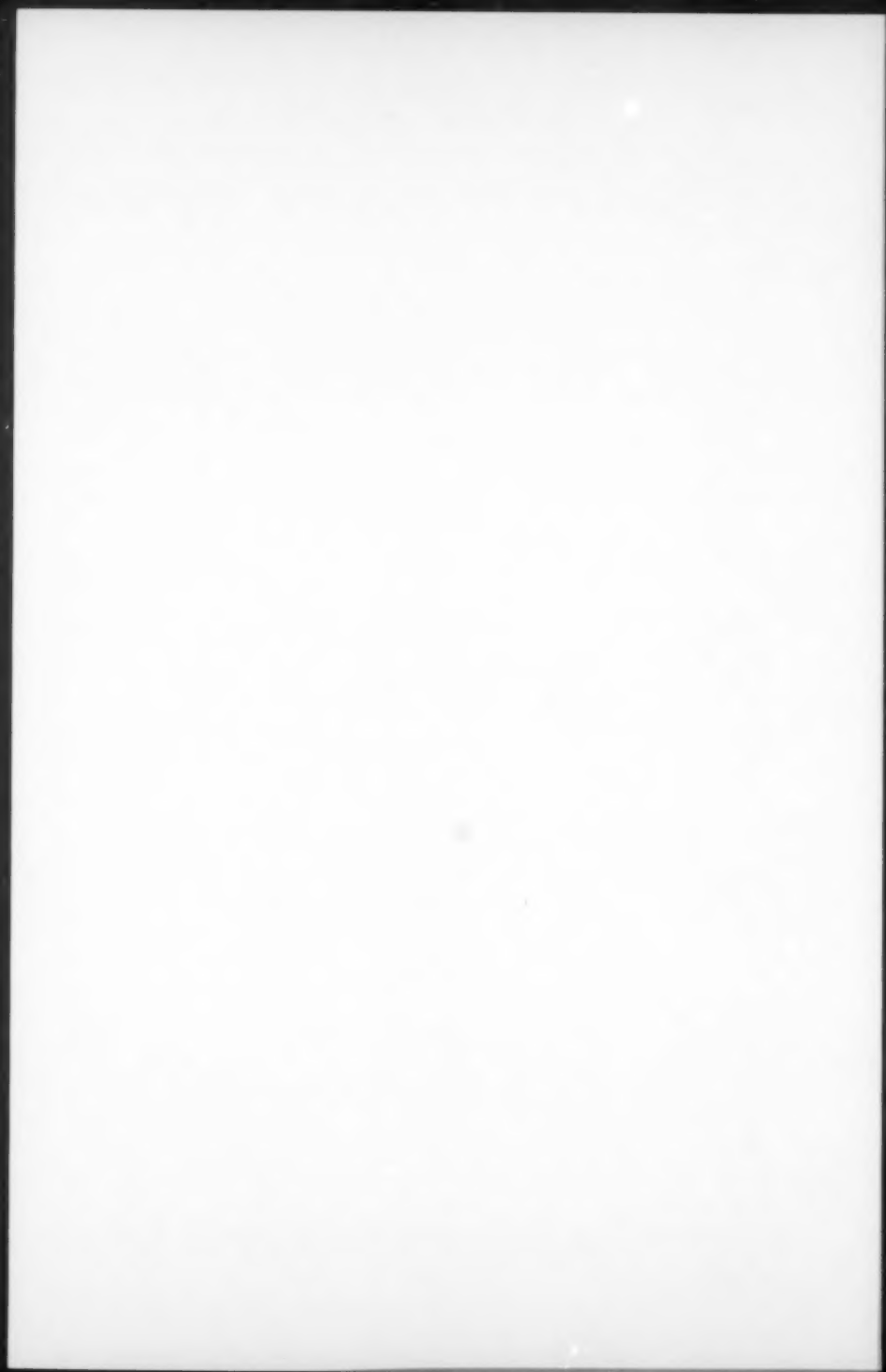


Author Index to Volume 13

- | | |
|----------------------|----------------------|
| Allen, N. S., 241 | McKellar, J. F., 241 |
| Baer, E., 1 | Penwell, R. C., 63 |
| Baughman, R. H., 219 | Smith, T. W., 63 |
| Ganguly, B. N., 63 | Tesoro, G. C., 283 |
| Hopfinger, A. J., 1 | Yamamoto, A., 161 |
| Lenk, R. S., 355 | Yamamoto, T., 161 |
| Mauritz, K. A., 1 | Yee, K. C., 219 |



Subject Index to Volume 13

- Absorption of light, by amide group, 245
 —, by aromatic salicylates, 272
 —, by dyes, 263
 —, by 2-hydroxybenzophenones, 272
 —, by hydroxybenzotriazoles, 273
 —, by nickel (II) chelates, 274
 —, by nylon polymers, 242–247, 251–253
 —, by pigments, 271
 —, by titanium dioxide, 258
 Absorption spectra of PVK, 102, 123
 Acetylene diols and polymers thereof, 220, 233
 Acoustical measurements of PVK, 92
 Acridine dyes, photobleaching, 264
 —, quenching by, 265
 Acrylic fibers, 322
 Acrylic plastics, 333
 Acrylonitrile, in polymerization of NVK, 71, 72
 Action spectra of PVK, 126, 141
 —, methylene blue, with, 126
 —, pinacyanol, with, 126
 —, TCNE, with, 126
 Activation energy, 104
 —, dielectric, 88
 —, hole, 114
 —, PVK:TNF, 136
 —, thermal, 78, 107, 114
 Acyloxy *N*-phosphonium salts of pyridine, 364
 1,4-Addition polymerization, 219–239
 1,6-Addition polymerization, 229–234
 Alkylaluminum compound, 161, 168
 Alkylation, effect of, 359
 Alkylzirconium, 166
 α , β -Unsaturated carbonyl groups, in nylon polymers, 245, 254, 255
 —, in polybutadiene, 255
 —, in polyolefins, 255
 —, photoreactions of, 254, 255
 Alternating copolymerization of NVK, 73, 74
 Alumina, 202
 Amide group, absorption of, 245
 —, phosphorescence, 245
 —, photolysis, 247
 —, photo-oxidation, 249
 —, singlet-triplet transition, 245
 —, structurally perturbed, 245, 246
 Amide—heterocycle polymers, ordered, 374
 Aminoanthraquinones, 264–267
 —, fluorescence of, 264
 Amino benzhydrazide, 379
 Amino benzoic acids, 358, 360
 (Amino cyclohexyl)methane, 374
 Amorphous materials, 100
 —, PVK, 83
 —, selenium, 109
 Anatase, photoactivity of, 255–259
 (ANi-TFA)₂, 192
 (ANiX)₂, 193
 Anthraquinone dyes, fluorescence of, 264
 —, photoreduction of, 266, 267
 —, photosensitized degradation by, 260, 263, 265
 —, see Vat dyes
 Anthrazolines, 368
 Anti-form, 193
 Applications, epitaxial crystallization, 37
 Aromatic salicylates, 273
 Arylene diacids, 360
 Arylene diamines, 360
 Azobisisobutyronitrile, in free radical polymerization of NVK, 71, 72
 Barrier in PVK, 110, 114
 —, injection, 110
 Benzoylperoxide, in free radical polymerization of NVK, 66
 Binder matrix, PVK, 140
 Biomineralization, 30
 Biopolymer epitaxy, 35
 2,2-Bipyridine, 168
 Birefringence in PVK, 86, 92
 —, intrinsic, 86
 Bisacid A2, 360
 —, copolyhydrazides, ordered, 384
 —, homopolyhydrazide, 384
 Bis(amino benzyl)diphenyl ether, 368
 Bis(amino phenyl)ether, 374
 Bisester A22, 383
 Bisketomethylene monomer, 368
 1,3-Bis(*N*-carbazolyl)propane, excimer emission

- from, 97
- 1,3-Bis[2-(*N*-ethylcarbazolyl)]propane, excimer emission from, 97
- Bithiazole polymers, 374
- Block copolymerization of NVK, 75
- Brittle fracture, 94
- Bulk trapping in PVK, 107, 114
- Carbon black, 272
- Catalysis, epitaxial, 54
- Cationic polymerization of NVK, 66, 67
- Cellular plastics, 340-345
- Cellulose, 308, 315
- Cellulose acetate, 316
- Cellulosics, 335
- Chain-scission nylon polymers, 247-252
- Chain symmetry, 220, 224-230, 232, 234, 235
- Chain transfer, 212
- Chalking, 256
- Charge carrier, 101, 120
- Charge generation, 112
- Charge transfer, 125, 267
 - , complex, 127
- Chemical modification, 287
- Chemical shift of protons in PVK, 79
- Child's law, 119
- Chirality, 235
- Chloranil in polymerization of NVK, 69
- CH_3TiCl_3 , 165
- Coatings, fire retardant, 347
 - , intumescent, 348
 - , nonintumescent, 348
- Collagen, 30
- Combustion, 291
- Comonomers, 318
- Computer, interchain interactions, polyethylene/NaCl, 52
 - , polyethylene/alkali halide, 44
 - , polyoxymethylene/alkali halide, 47
 - , polysulfur nitride, 55
 - , simulation of epitaxy, 44, 47, 50, 52, 55
 - , solvent effects, 50
- Concentration effects, 15, 19
 - , polyethylene/alkali halide epitaxy, 15
 - , poly(vinyl chloride)/alkali halide epitaxy, 19
- Conduction in PVK, 100
- Contact film method, 6
- Contrast potential, 120
- Copolyaramides, 360
- Copolyhydrazides, 367
- Copolymer, PVK, 140
 - , graft, 142
- Copolymerization of NVK, 73-75
 - , with acrylonitrile, 71, 72
 - , with diethylazodicarboxylate, 74, 75
 - , with diethylfumarate, 73
 - , with fumaronitrile, 73
 - , with methyl methacrylate, 73
 - , with *n*-dodecylmethacrylate, 75
 - , with *N*-vinylphthalimide, 74
 - , with 1-phenyl-1,2,4-triazoline-3,5-dione, 74
 - , with styrene, 73
- Copolymers, block, 359
 - , ordered, 359
- Cossee's mechanism, 162
- Cotton fabrics, 309
- Cotton, phototendering, 267-270
- CrA_3 , 182, 205
- Crystallization of PVK, 79-88, 145
- Cyclic acetylenes and polymers thereof, 234-238
- Cyclobutane rings (in polymer chains), 366
- Cyclodehydration, 372
- Cyclodimer of NVK, 68, 71, 73
- Cyclodimerization of NVK, 67, 71, 73
- Decarboxylation, 251
- Decomposition of PVK, 77
- Degradation of PVK, 77, 78
- Delayed fluorescence in PVK, 99
- Delustrants, photosensitizing behavior of, 255, 256, 258
- Density of PVK, 84, 85, 88, 96
- Diacetylene monomers and polymers, 219-239
- Diamagnetic chelates, 274, 275
- Diamino benzidine, 375
- (Diamino dibenzoyl)diphenyl ether, 368
- Diamino diphenyls, 360
- Diaryl hydrazine, 372
- Diaryl oxadiazoles, 372
- Dibenzoyl phenylene diamines, 368
- Dielectric relaxation in PVK, 88, 92
 - , activation energy, 88
- Diethylazodicarboxylate, copolymerization with NVK, 74, 75
- Diethylfumarate, copolymerization with NVK, 73
- Diphenacetyl aromatic monomer, 368
- Diphenyl diacetylene, 223
- Diphenyl isophthalate, 375
- Diphenylene phthalido hydrazide, 382
- Dipiperidyl diamine, 369
- Disorder, origin of for solid-state polymerization, 224-227, 230, 232
- Donor-acceptor interactions in polymerization of NVK, 68-70
- Doping, PVK, 123

- Double-bond-opening polymerization, 185
Drift mobility, PVK, 104
—, velocity, 115
Durability, 256
Dyes, 100, 122, 125
—, acridine, 264, 265
—, aminoanthraquinones, 264–267
—, anthraquinone, 260, 263
—, anthraquinone sulphonates, 267, 268
—, fluorescence of, 264
—, hydroxyanthraquinones, 264
—, nylon complexes, 265
—, photophysical properties, 263–265
—, photosensitized degradation by, 259–270
—, piperidinoanthraquinones, 265–267
—, vat, 260, 263, 267
Dye sensitizer, 122
Dynamic viscoelastic properties of PVK, 96

Elastomers, 345–347
Electroinitiated cationic polymerization of NVK, 67, 68
Electron diffraction, 2, 8, 14, 36
—, of nylon 6, 8
—, of polyethylene, 14
—, of poly- γ -benzyl-L-glutamate, 36
—, PVK, 81, 83
Electron microscopy, PVK, 81, 83
Electron transfer, 257, 262–263, 276
Electron transport, PVK, 103
Electrophotography, 100
Electrostatic energy, 43
Elongation of PVK, 94
Emission limited, PVK, 118
Energetic contributions, polyethylene/alkali halide epitaxy, 46
Energy transfer, in dyed cellulose, 268
—, in dyed nylon, 264, 265
—, long range, 275
—, triplet-singlet, 265
—, triplet-triplet, 265, 273, 274
—, PVK, 125
Entropy effects, 17, 48
Epitaxial crystallization, 1–4, 23
—, definition of, 1
—, from solution, procedure, 3
—, from the melt, procedure, 4
—, historical studies of, 2
—, of low molecular weight substances, 2
—, on inorganic substrates, 4
—, on polymer substrates, 23
Epitaxial parameters, 9
Ethylene, 165, 167
Excimer fluorescence in PVK, 99
Exposure in PVK, 120
—, flux, 118, 119
—, time, 119
Extended-chain crystals, 219

Fiber blends, 324
Fibers, 308
—, acrylic, 322
—, modacrylic, 322
—, polyester, 317
—, polyolefin, 323, 326
—, poly(vinyl chloride), 323
—, poly(vinylidene chloride), 323
Fillers for PVK, 94
Flame-retardant compounds, 294
Flame retardation, 293
Flammability, 302
Flash photolysis, 267–269
Fluorescence, dyes, 264
—, in PVK, 97
—, nylon polymers, 245, 246
—, nylon salt, 245
—, quenching, 275
Flux, in PVK, 102, 118, 119
—, light, 102
Foaming agents for PVK, 94
Foams, 340–345
—, flexible, 345
—, polystyrene, 344
—, polyurethane, 341
—, rigid, 340
Free-radical polymerization of NVK, 64
Fumaronitrile, copolymerization with NVK, 73
Furane dicarboxylic acid, 374

Generator surface, 112
—, efficiency, 116
—, limited, 116
Geometry, 6, 9, 13, 17, 22, 31, 34, 40, 41, 45, 50, 53
—, interchain, 53
—, Nylon 6/KCl, 9
—, of collagen molecule, 31
—, of hydroxyapatite structure, 34
—, polyethylene/graphite, 22
—, polyethylene/NaCl, 17
—, polymer-substrate, 41
—, polyoxymethylene/KCl, 13
—, preferred orientation, polyethylene, 45
—, single crystal-alkali halide substrate, 6
—, solvation monolayer, 50
—, substrate, alkali halide, 40
Glass-transition temperature of PVK, 77, 93
Graft polymerization of NVK, 75

- Halocarbons in polymerization of NVK, 72, 73
- Heat of polymerization of NVK, 64
- Heptamethylene diamine, 372
- 2,4-Hexadiyn-1,6-diol, 220
- High-activity Ziegler catalysts, 202
- Hole conduction in PVK, 103
- , mobility, 104
 - , range, 120
 - , PVK:TNF, 136
- Hole mobility in PVK, 118, 119, 123, 145
- , molecular weight dependence, 145
- Homopolyamides, simple, 356
- Hydrazine, 380
- Hydrogen bonding, hydroxybenzophenones, 272
- , hydroxybenzotriazoles, 273
 - , nylon 6,6, 246
- Hydroxyapatite, 30
- Hypochromism in PVK, 92
- Impurities, PVK, effect on thermal stability of, 77, 78
- , inhibition of polymerization by, 65
- Impurity, carbonyl, 245, 253-255
- , fluorescent, 245
 - , nylon polymer, 242-246
 - , oxidation, 253-255
 - , phosphorescent, 245, 253-255
- Induced dipolar energy, 43
- Infrared dichroism, 86-88, 96
- Inhibition of polymerization of NVK, 65
- , by impurities, 65
 - , by oxygen, 65
 - , by phenanthrene, 65
- Inhibition of propagation of NVK cation radical, 71
- Initiation, 211
- Injection, PVK, 114
- , efficiency, 114
- Interrupted transit, PVK, 114
- Invertebrate, exoskeleton formation, 38
- Is*- and *tere*- phthaloyl polyhydrazides, 381
- Isouquinoline systems, 368
- Isostoichiometry, "effective", 384
- Isotactic PVK, 84, 85
- J-mode, PVK, 101, 118
- Kapton, 374
- Kevlar, 357
- Kinetics, epitaxial, 15, 19, 36
- , polyethylene, 15
 - , poly- γ -benzyl-L-glutamate, 36
 - , poly(vinyl chloride), 19
- Ladder polymers, 238
- Lattice disregistry, 2, 11, 13, 15, 27, 57
- , definition of, 2
 - , effects on chain orientation, 11, 57
 - , effects on growth rate, 13, 15
 - , effects in polymer-polymer epitaxy, 27
 - , effects on polymorphism, 15, 57
- Least-motion principle, 220-224, 226, 230-232
- Light scattering from PVK, 86, 87
- Light, see Absorption, Luminescence (fluorescence and phosphorescence) and Photo-, etc.
- Linear polyesters, 335
- Liquid crystals, 358
- Luminescence, amide group, 245
- , aminoanthraquinones, 264
 - , dyes, 263
 - , hydroxyanthraquinones, 264
 - , model amides, 245, 253-255
 - , pigmented polymers, 258
 - , quenching, 258, 265, 274, 275
 - , titanium oxide, 258
- Luvican, 143
- Measurement methods for transport in PVK, 101
- , direct contact, 101
- Mechanical properties of PVK, 94
- Melt processing of PVK, 80, 88, 94
- Metathesis catalyst, 208
- Methyl methacrylate, copolymerization with NVK, 73
- Mobility in PVK, 113, 119
- , drift, 115
- Model amides, luminescence, 245, 246, 253-255
- , photodegradation, 247
 - , photo-oxidation, 249
 - , thermal oxidation, 253-255
- Model systems, 263
- Modacrylic fibers, 322
- Molecular weight dependence, polyethylene/alkali halide epitaxy, 13-15
- Molecular weight, effect on crystallinity in PVK, 88
- Morphology of PVK, 79-88
- N*-alkenylcarbazoles, 150
- , crystallinity in polymers of, 151
 - , Ziegler-Natta polymerization of, 151
- N*-alkylamides, photo-oxidation, 250, 263
- , thermal oxidation, 250
- N*-alkylvinylcarbazoles, 150, 151
- Naphthalene dicarboxylic acid, 360

- , difluorides of, 360
- n*-dodecylmethacrylate, copolymerization with NVK, 75
- N*-ethyl-2-vinylcarbazole, 151, 152
- N*-ethyl-3-vinylcarbazole, 151, 152
- 1-[2-(*N*-ethylcarbazolyl)]-3-[3'-(*N*-ethylcarbazole)]propane, excimer emission from, 97
- Nickel (II) chelates, 269
- Ni(olefin)(bpy), 172
- N*-isopropylcarbazole, uv spectrum of, 96, 97
- , fluorescence of, 97
- Nmr of PVK, 79, 80
- N,N* bis(cyanoethyl)acrylamide polymer, 385
- N,N'*-dialkylamides, photo-oxidation, 250
- , thermal oxidation, 250
- N,N'*-di-*n*-butyladipamide, 245, 246
- Nomex, 356
- Norrish type I & II reactions, 254
- N*-pentylhexanamide, photo-oxidation of, 249
- N*-thio carbanhydride, 366
- N*-vinylphthalimide, copolymerization with NVK, 74
- , cation radical, 68, 72
- NVK, conduction in, 140
- Nylon 4I, 356
- Nylon 4T, 356
- Nylon 6,6 salt, fluorescence, 245, 275
- , oxidation, 245, 275
- , phosphorescence, 245
- Nylon 6T, 356
- Nylon MXD 6, 358
- Nylon polymers, dye complex, 265
- , fluorescence, 245, 246, 253
- , hydrolysis of, 248
- , luminescence of, 243–247, 253–255
- , oxidation, 245, 253–255
- , phosphorescence, 245, 247, 253–255
- , photocrosslinking of, 247, 248
- , photodegradation of, 247–249
- , photo-oxidation of, 249–252
- , photosensitized degradation of, 255–270
- , photosensitized degradation of, by dyes, 259–270
- , photosensitized degradation of, by pigments, 255–259
- , photostabilization of, 270–276
- , phototendering of, 260–270
- , pyrrole formation in, 251, 252
- , salt, 245
- , spinning of, 245
- , *T, B*-unsaturated carbonyl impurity in, 245, 254, 255
- , thermal history of, 252–255
- Nylon, semiaromatic, 356, 357
- Nylons, 334
- Octamethylene diamine, 372
- Optical microscopy of PVK, 80, 82, 88
- , properties of PVK, 96–100
- Ordering in amorphous PVK, 79–88
- Orientation of PVK, 80, 88
- , electric field, effect of, 88
- , magnetic field, effect of, 88
- Orthophthaloyl chloride, 357
- Oxadiazole systems, 369
- Oxidation, see Photo- and Thermal-
- Oxidative stability of PVK, 77, 78
- Oxygen, effect on the photodimerization of NVK, 73
- Paper products, 308
- Paracrystalline PVK, 88
- Penultimate effect, 176
- Percent crystallinity in PVK, 87
- Phase separation during polymerization, 224
- Phenanthrene, inhibition of polymerization by, 65
- Phenyl substituents, packing of, 371
- 1-Phenyl-1,2,4-triazole-3,5-dione, 74
- Phosphorescence, dyed nylon 6,6, 265
- , in PVK, 99
- , lifetimes, 244, 245
- , model amides, 245
- , pigmented nylon 6,6, 258, 259, 275
- , pigmented polyolefin, 258
- , quenching, 258, 275
- , α,β -unsaturated carbonyl groups, 245, 254, 255
- Photocrosslinking, nylon polymers, 247, 248
- , α,β -unsaturated carbonyl groups, 255
- Photo-Fries arrangement, 273
- Photooxidation, model amides, 249, 250
- , *N*-alkylamides, 250
- , *N,N'*-dialkylamides, 250
- , *N*-pentylhexanamide, 249
- , nylon polymers, 249–255
- , nylon 6, 249, 252
- , nylon 6,6, 250–255
- , nylon 6,10, 249
- , polyolefins, 255
- Photoactivity, dyes, 260, 263, 265
- , pigments, 255–259, 272
- , piperidinoanthraquinones, 266
- , titanium dioxide pigments, 255–259
- , vat dyes, 260
- Photochemistry, amide groups, 247
- , dyed nylon, 259–270
- , nylon polymers, 241–281
- , pigmented nylon, 255–259

- , stabilized nylon, 270–276
- Photoconductivity of poly(*N*-alkylvinylcarbazoles), 151, 152
- , PVK, of, 100
- Photoconductor, PVK, 100
- Photocuring, 258
- Photodegradation, of nylon polymers, 247–249
 - , effect of wavelength on, 242, 243, 258
- Photodimerization of NVK, 73
- Photoinduced polymerization of NVK, 70
- Photolysis, nylon polymers, 247–249
- Photophysical properties of, aminoanthraquinones, 264–267
 - , dyes, 263, 268–269
 - , hydroxyanthraquinones, 264
 - , pigments, 258
 - , titanium dioxide pigments, 258, 275
 - , vat dyes, 268, 269
- Photopolymerization of NVK, 70–73
- Photoreduction, anthraquinone dyes, 266, 267
 - , titanium dioxide pigments, 257
 - , vat dyes, 268
- Photosensitivity, PVK, 100, 122, 123
 - , sensitization, 100, 123, 125
- Photosensitized degradation, by dyes, 259–270
 - , by pigments, 255, 271
 - , by piperidinoanthraquinones, 266, 267
 - , by titanium dioxide pigments, 255–259
 - , by vat dyes, 260
 - , of cellulose, 260, 262, 267–270
 - , of model systems, 263
 - , of nylon polymers, 255–270
 - , of tetrahydro, 269
- Photostabilization, by alkali metal halides, 275
 - , aromatic salicylates, 273
 - , by carbon black, 272
 - , by excited state quenching, 271
 - , by hydroxybenzophenones, 272, 273
 - , by hydroxybenzotriazoles, 273
 - , by metal salts, 275
 - , by nickel (II) chelates, 274, 275
 - , by pigments, 271
 - , by radical scavenging, 271
 - , by screening, 270
 - , by uv absorption, 270
 - , of nylon polymers, 271, 273, 275
 - , of polyolefins, 272–275
 - , of polystyrene 273
- Phototendering, by anthraquinone dyes, 260, 263–267
 - , by vat dyes, 260
 - , effect of wavelength on, 268
- , mechanisms of, 261–263, 267
- , of cellulose, 260, 262, 267–270
- , of nylon polymers, 260, 265
- Photoyellowing, 250, 251
- π -Bond formation, 162
- Pigments, absorption, 271
 - , luminescence of, 258, 275
 - , phosphorescence of, 258, 259, 275
 - , photoactivity of, 255–259, 272
 - , photochemistry of, 255–259
 - , photoreduction of, 257
 - , photosensitized degradation by, 255–259
 - , photostabilization by, 271
- Piperidinoanthraquinones, 265, 266
- π -Type interaction, 172
- Plasticizers for PVK, 94
- Plastics, 325–339
- Polyacetates, 335
- Polyamide, 320
 - , acrylic, 322
 - , modacrylic, 322
- Polyamide film, irradiation effect on, 250
 - , see also Nylon polymers
- Poly(amide hydrazide)s, 362
- Polyamides, 355ff
 - , heterocyclic, 359
 - , with heterochain atoms, 367
 - , with heteroring atoms, 367, 374
- Poly(aramide hydrazide)s, 361
- Polyaramides, 355ff
- Polyaryl ethers, 336
- Polybenzamide, 358
- Polycarbonates, 335
- Polycondensation, by reaction of diesters and diamines, 364
- Poly(ethylene terephthalate), 317
- Polyhydrazides, 359, 362
- Polyimides, 367
- Poly-[(*m*- and *p*-)phenylene (*tere*- and *iso*-)phthalamide)s, 356, 357
- Polymer single crystals, 219, 220, 227, 238
- Polymer–substrate interaction, 42
- Polymerization by transition-metal hydrides, 194
- Polymerization, effect of method on crystallinity of PVK, 81
 - , interfacial, 356
 - , low temperature, solution, 356
- Polymerization of dienes, 189
- Polymerization of NVK by electron-deficient species, 68, 69
 - , by acrylonitrile, 71, 72
 - , by chloranil, 69
 - , by halocarbons, 73
 - , by Ziegler–Natta catalysts, 76

- Polymerization of olefinic hydrocarbons, 163, 182
- Polymerization of vinyl monomers, 168, 186
- Polymers, flammability, 287
- , modification, 301
- , photosensitized degradation of, 255, 260
- , thermal history of, 252
- Polymorphism, 3, 5, 14
- , detection by electron diffraction, 3
- , of polyethylene, 5, 14
- Poly(*N*-alkylvinylcarbazole)s, mobility of charge carriers in, 151, 152
- , nmr relaxation studies on, 151, 152
- , nmr spectra of, 151, 152
- , photoconductivity of, 151, 152
- Poly(*N*-ethyl-2-vinylcarbazole), 150–152
- Poly(*N*-ethyl-3-vinylcarbazole), 150–152
- Poly(*N*-vinylcarbazole), photoconductivity in, 100, 102, 111, 113, 118, 119
- , generated carrier in, 106
- Polyolefin, 323
- Polyolefin fibers, 323, 326
- Polyoxadiazoles, 369
- Polyoxadiazolidines, 372
- Poly(*p*-carboxyphenyl thiourea), 366
- Poly[piperazine (*ortho*-, *iso*-, and *tere*-)-phthalimide)s], 357
- Polypyromellitimides, 374
- Polyquinoxalines, 371
- Poly(sebacoyl dihydrazide), 380
- Polythiadiazoles, aromatic, 383
- Polythiureas, 365
- Polyureas, 365
- Polyurethanes, 339
- Poly(vinyl chloride), 323, 329
- Poly(vinyl chloride) fibers, 323
- Poly(vinylidene chloride), 323
- Poly(vinylidene chloride) fibers, 323
- p*-Phenylene diamine adipamide, 358
- p*-Phenylene diamine sebacamide, 358
- p*-Phenylene diamine suberamide, 358
- Propagation, 212
- Propylene, 165, 167
- Pseudo-polyphenylene, 372
- p*-Thinylaminobenzoyl chloride hydrochloride, 358
- Purification of NVK, 65
- PVK:TNF, 127, 129
- Pyrazine, 372
- Pyridine, acyloxy *N*-phosphonium salts of, 364
- Pyridine dicarboxylic acid, 374
- Pyrolysis, 291
- Pyrolysis of PVK, 78
- Pyromellitic dianhydride, 374
- Quantum efficiency in PVK, 104, 126
- , field dependence of, 107
- Quenching, by acridine dyes, 265
- , by aromatic salicylates, 273
- , by carbon black, 272
- , by ground-state oxygen, 255, 275
- , by hydroxybenzophenones, 273
- , by manganese compounds, 275
- , by metal halides, 275, 276
- , by nickel (II) chelates, 269
- , by titanium dioxide pigments, 258
- , of chromophores, 274
- , of phosphorescence, 274
- , of singlet oxygen, 275
- , of triplet state, 274
- , Stern–Volmer, 276
- Radical scavenging, by metal salts, 275
- , by nickel (II) chelates, 275
- Raman spectra, 227–233
- Rate constant, 199
- Rate equation, 178, 188
- Rate of cationic polymerization of NVK, 67
- Rate of free-radical polymerization of NVK, 65, 66
- Rate of polymerization, 178
- $R_2Co(bpy)_2$, 170
- $RCrCl_2(THF)_3$, 167
- Reactant concentration, optimum, 364
- Reaction mode for polymer crystals, 220–224
- Reaction of tetracyanoethylene with NVK, 69, 70
- Reactivity, structure dependence of, 220–224
- Recombination of carriers in PVK, 113, 120
- Relaxation processes in PVK, 88
- , dielectric, 88
- , nmr, 88
- Resins, amino, 337
- , epoxy, 339
- , phenolic, 336
- , unsaturated polyester, 337
- Resistive materials, charge transport in, 101
- $R_2Fe(bpy)_2$, 170
- Rheo-optical studies of PVK, 85, 86, 88
- Ring-opening polymerization, 185
- $R_2Ni(bpy)$, 170
- Rutile, 255–259
- Screening, by carbon black, 272
- , by pigments, 271
- Selenium-injected carriers, 102
- , -PVK interface, 112, 117
- , -PVK system, 113, 115, 118
- , -sensitized PVK, 109, 110
- Sensitization of PVK, 123–125

- , mechanisms of, 125
- σ -type interaction, 172
- Silica, 202
- Simulation study of photoconductivity in PVK, 145
- Single crystals, formation of, 6
- Singlet energy transfer in PVK, 98
- Singlet oxygen, 255, 257, 261, 274
- Solid-solution formation, 224, 233
- Solid-state polymerization, 219–239
 - , effect of monomer crystal structure on, 75, 76
 - , of NVK, 75, 76
- Solid-state structure of PVK, 79–88
- Solution properties of PVK, 89
 - , characteristic ratio in, 90, 92
 - , conformation, in, 89
 - , theta solvent, 90
 - , theta temperature, 90, 91
- Solvation effects, 17, 50
 - , experimental investigations, 17
 - , theory of, 50
- Space charge, in PVK, 111
 - , limited, 111, 113, 115, 119
 - , perturbed, 111, 113, 118, 120
- Space groups, of acetylenic monomers, 222, 232, 233
 - , of acetylenic polymers, 227, 236, 238
- Spontaneous copolymerization of NVK, 74
- "Squaric acid," polyamides from, 361
- Steady-state current in PVK, 113, 116
- Stereoregularity in PVK, 79–88
- Steric hindrance, 248
- Steric hindrance in PVK, 91, 92
- Stern–Volmer plot, 276
- Stir opalescence, 357
- Stochastic conductivity, 149
- Strain optical coefficient of PVK, 96
- Stress optical coefficient of PVK, 87, 96
- Structure of PVK, 79–88
 - , bulk crystallization, 79
 - , nmr, 79
 - , solution crystallization, 79
 - , stereoregularity, 79
 - , tacticity, 81, 84, 85
- Styrene, 328
 - , copolymerization with NVK, 73
- Substrate, 2, 4, 21, 23
 - , action of, 2
 - , ionic, 4
 - , nonionic, 21
 - , polymeric, 23
- Surface, curvature of, 48
 - , of polyethylene/NaCl, 45
 - , potential energy, 42, 45, 48
- Symmetry conservation principle, 220, 224–227, 230, 232
- Syndiotactic PVK, 85
- Syn-form, 193
- Synthetic carbazole, 65
 - , TCNE, 126, 127
 - , TCNQ, 127
- Temperature dependence of nmr of PVK, 80
- Terephthalamides, thermal stability of, 359
- Terephthaloyl chloride, 356
- Termination, 212
- Tertiary phosphine, 168, 179
- Tetracyanoethylene, TCNE, 68
- Tetramethyltitanium, 165
- Tetrayne, monomers and polymers, 232–234
- Tetrazoles, 372
- Theory of polymer epitaxy, 38
- Theory of PVK electrical behavior, 145
- Thermal degradation, 286, 291
- Thermal history, nylon 6,6 polymer, 253
 - , nylon 6,6 yarn, 253
 - , polymers, 252
- Thermal oxidation, model amides, 245, 246, 253–255
 - , *N*-alkylamides, 250
 - , *N,N'*-dialkylamides, 250
 - , *N,N'*-di-*n*-butyladipamide, 245, 246
 - , nylon polymers, 245
 - , nylon 6,6 salt, 245
 - , nylon 6,6 yarn, 252, 253
- Thermal stability of PVK, 77, 78
 - , activation energy, 78
 - , decomposition, 77
 - , environmental effects, 78
 - , impurities, effect of, 78
 - , in nitrogen, 78
 - , oxidation, 77
 - , pyrolysis, 78
- Thermoplastic resins, 325
- Thermosetting, 336
- Thiophene dicarboxylic acid, 374
- TiBz₄, 165, 167
- Titanium dioxide, absorption by, 258
 - , delustrant, 255
 - , luminescence of, 258, 275
 - , manganese coated, 275
 - , photoactivity of, 255–259
 - , photoreactions of, 257
 - , photoreduction of, 257
 - , photosensitized degradation by, 255–259
 - , quenching by, 258, 275
 - , surface hydroxyl groups, 258, 275
- TNF, dye-sensitized PVK, 122
- Toxicity, 302

- , TPC, 127, 130
- Transacylation, 360
- Transamidation, 360
- Trans*-1,2-dicarbazylcyclobutane, 68
- Transient current in PVK, 110, 111
- Transit time in PVK, 103, 107, 110, 112
 - , field dependence of, 106
 - , holes of, 111
- Transition, α/β , exothermic, 367
- Transition-metal alkyl, 166
- Transition-metal alkyls supported on metal oxides, 200
 - , holes, of, 111
- Trap release, 107
 - , free, 113
- Trapping in PVK, 107, 114, 115
 - , bulk, 107
 - , lifetime of, 114, 115
- Triacetate, 316
- Tricarboxylic acids, 378
- 1,1,2-Tricyanobutadienylcarbazole, 70
- Triplet energy transfer in PVK, 98
- Triyne, monomers and polymers, 229-232
- Tropylium ion-initiated polymerization of NVK, 66, 67
- Unsymmetric diacetylenes, 226-229
- Uv spectra of PVK, 96, 122, 143
- Van der Waals energy, 43
- Vapor phase epitaxy, 2, 6, 17, 55
 - , of S_2N_2 , 55
 - , on low molecular weight substrates, 2
 - , on polymers, 6, 17
- Vat dyes, photoreduction of, 268
 - , photosensitized degradation by, 260, 263, 267-270
 - , spectroscopic properties of, 268-269
 - , triplet-triplet absorption spectra of, 268
- Vinylcarbazoles, other, 150-152
- Viscosity of PVK, 96
- V-mode, measurement of photoconductivity using, 102, 115
- Weathering, 256
- WLF equation for PVK, 96
- Wood products, 305
- Xerographic gain, 102, 110
 - , XG, 110, 115-117
- Xerography, 103
- X-ray diffraction of PVK, 81, 83, 86, 88, 96, 145
 - , induced polymerization of NVK, 76
- Xylons, 320
- Xylylene diamine, 358
- Yielding, PVK, 94
- Z value, 167
- Ziegler catalyst, 161, 202
- Ziegler-Natta polymerization of NVK, 76
- ZrA₄, 182
- ZrBz₄, 165, 167, 183

